# AKDENIZ UNIVERSITY

## Computer Engineering Department

## CSE 211 Digital Design (2024-2025 Fall)

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## Lab04 – Combinational Logic – 25.11.2024

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|   | Student No | Student Full Name | Group No |
|---|---|---|---|
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
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## Lab Study 1 – *3x8 Decoder*

Design and implement a 3-to-8 decoder circuit using the 74138 IC and analyze its functionality. Then, fill in the truth table below.

| INPUTS | | | | OUTPUTS (LEDs) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | E | D0 | D1 | D2 | D3 | D4 | D5 | D6 | D7 |
| X | X | X | 0 |  |  |  |  |  |  |  |  |
| 0 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |
| 0 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |
| 0 | 1 | 0 | 1 |  |  |  |  |  |  |  |  |
| 0 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |
| 1 | 0 | 0 | 1 |  |  |  |  |  |  |  |  |
| 1 | 0 | 1 | 1 |  |  |  |  |  |  |  |  |
| 1 | 1 | 0 | 1 |  |  |  |  |  |  |  |  |
| 1 | 1 | 1 | 1 |  |  |  |  |  |  |  |  |

**74LS138 (3x8 Decoder)**